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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte PETER J. T. VAN RAVENSTEIN and
CHRISTIAN C. M. VISSCHERS

Appeal 2007-2757
Application 09/304,552
Technology Center 2600

Decided: December 19, 2007

Before KENNETH W. HAIRSTON, MAHSHID D. SAADAT,
and JOHN A. JEFFERY, *Administrative Patent Judges*.

JEFFERY, *Administrative Patent Judge*.

DECISION ON APPEAL

1 Appellants appeal under 35 U.S.C. § 134 from the Examiner's rejection of claims 1-15. We have jurisdiction under 35 U.S.C. § 6(b). We affirm. We also enter new grounds of rejection under 37 C.F.R. § 41.50(b).

STATEMENT OF THE CASE

Appellants invented an observation system with multiple cameras that are displayed simultaneously on a monitor. Upon the occurrence of a relevant event (e.g., a doorbell, an alarm, etc.), the observation system stores images not only at the time of the event, but also for a predetermined time both before and after the event. This sequence of images is then repeatedly displayed in a picture-in-picture format on the monitor. Such a feature will draw the guard's attention so that appropriate action can be taken.[1] Claim 1 is illustrative with the key limitations in dispute emphasized:

1. An observation system, comprising:

an observation camera; and

an observation monitor unit coupled to the observation camera, and including means for detecting for observation purposes a relevant event occurring outside the observation system;

wherein the observation monitor unit includes:

means for recording a plurality of images including an image at a time of the event; and

means for *repeatedly* displaying a sequence formed by the plurality of images *upon the occurrence of the event.*

The Examiner relies on the following prior art reference**[s]** to show unpatentability:

Cotton	US 4,630,110	Dec. 16, 1986
Herzog	US 4,703,356	Oct. 27, 1987
Tapp	US 5,657,076	Aug. 12, 1997
Johnson	US 6,175,373 B1	Jan. 16, 2001 (filed Apr. 30, 1999)

[1] *See generally* Specification 1:4 - 3:20.

Quirk GB 2 203 586 A Oct. 19, 1988

1. Claims 1-15 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Cotton and Herzog.
2. Claims 1-3, 5, and 6 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Tapp and Quirk.
3. Claims 1-15 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Tapp and Johnson.

Rather than repeat the arguments of Appellants or the Examiner, we refer to the Briefs and the Answer[2] for their respective details. In this decision, we have considered only those arguments actually made by Appellants. Arguments which Appellants could have made but did not make in the Briefs have not been considered and are deemed to be waived. *See* 37 C.F.R. § 41.37(c)(1)(vii).

OPINION

The Obviousness Rejection Based on Cotton and Herzog

We first consider the Examiner's rejection of claims 1-15 under 35 U.S.C. § 103(a) as unpatentable over Cotton and Herzog. In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the Examiner to establish a factual basis to support the legal conclusion of obviousness. *See In re Fine*, 837 F.2d 1071, 1073 (Fed. Cir. 1988). In so doing, the Examiner must make the factual determinations set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966).

[2] Throughout this opinion, we refer to the most recent Appeal Brief filed September 22, 2005, Examiner's Answer mailed July 3, 2006, and Reply Brief filed September 11, 2006.

Discussing the question of obviousness of a patent that claims a combination of known elements, *KSR Int'l v. Teleflex, Inc.*, 127 S. Ct. 1727 (2007), explains:

> When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, §103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill. *Sakraida* [*v. AG Pro, Inc.,* 425 U.S. 273 (1976)] and *Anderson's-Black Rock*[*, Inc. v. Pavement Salvage Co.*, 396 U.S. 57 (1969)] are illustrative—a court must ask whether the improvement is more than the predictable use of prior art elements according to their established functions.

KSR, 127 S. Ct. at 1740. If the claimed subject matter cannot be fairly characterized as involving the simple substitution of one known element for another or the mere application of a known technique to a piece of prior art ready for the improvement, a holding of obviousness can be based on a showing that "there was an apparent reason to combine the known elements in the fashion claimed." *Id.* at 1740-41. Such a showing requires "some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. . . . [H]owever, the analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ." *Id.* at 1741 (quoting *In re Kahn*, 441 F.3d 977, 987 (Fed. Cir. 2006)).

If the Examiner's burden is met, the burden then shifts to the Appellants to overcome the prima facie case with argument and/or evidence.

Obviousness is then determined on the basis of the evidence as a whole and the relative persuasiveness of the arguments. *See In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992).

Regarding representative claim 1,[3] the Examiner's rejection essentially finds that Cotton teaches an observation system with every claimed feature except for means for repeatedly displaying a sequence formed by the plural images. The Examiner cites Herzog as teaching this feature and concludes that it would have been obvious to one of ordinary skill in the art at the time of the invention to repeatedly display a sequence of plural images in the system of Cotton (Ans. 3-4).

Appellants argue that there is no teaching or suggestion in the prior art to repeatedly display a sequence of plural images *upon occurrence of the event* as claimed. According to Appellants, recording in Herzog begins by manually operating a button. Appellants add that repetitive playback of the recorded images after filling the available memory in Herzog likewise occurs by manually pressing a button. Appellants contend that Herzog's *manual* repeat loop does not lend itself to the *event-based* repetition claimed. Appellants further argue that Herzog continuously fills available memory with video information, whereas Cotton teaches recording a limited amount of information upon activating an alarm (App. Br. 10-11; Reply Br. 3-4). Appellants further contend that the Examiner's rejection merely "reflect hindsight, reconstruction and speculation" and fails to constitute evidence to support a proper obviousness finding (App. Br. 14; Reply Br. 6).

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[3] Appellants argue claims 1-15 together as a group. *See* App. Br. 9-15. Accordingly, we select claim 1 as representative. *See* 37 C.F.R. § 41.37(c)(1)(vii).

The Examiner maintains that the video output of a camera in Cotton comprises images forming a sequence -- images viewed upon occurrence of an event. In view of Herzog, the Examiner takes the position that skilled artisans would have incorporated Herzog's teaching of repeatedly displaying a sequence of consecutive frames into Cotton's surveillance system to display multiple images repeatedly (Ans. 9).

The issue before us, then, is whether the skilled artisan would have reasonably combined the teachings of Cotton and Herzog to arrive at the claimed invention. For the reasons that follow, we answer this question "yes."

Cotton discloses a surveillance system that records and monitors video information from multiple cameras 20. The output of each camera is normally simultaneously viewed on monitor 27 in a respective quadrant 38-41 of the monitor (Cotton, col. 8, ll. 46-50; col. 9, ll. 11-32; Fig. 3A). Upon occurrence of a detected "alarm event" (e.g., depressing a panic button, cash drawer opened too long, etc.), the display format is changed such that a full screen display for that particular camera associated with the alarm event is displayed on monitor 27 as shown in Figure 3B and recorded (Cotton, col. 9, l. 45 - col. 10, l. 15; Fig. 3B).

Herzog discloses a system 10 for storing multiple incoming frames of video in memory and repetitively playing back a continuously repeating, consecutive sequence of the stored frames. To this end, a control 14 and memory 12 are disposed between cameras 24, 28 and display consoles 32, 34. To begin the recording process, the user presses the "Record Loop" button 62 on the control 14. Then, every subsequent incoming frame of video is stored in memory 12. Since memory 12 is arranged as a ring as

shown in Figure 2, the recording process fills all available memory locations and then overwrites previously filled memory locations until the recording process is stopped (Herzog, col. 3, l. 62 - col. 4, l. 45; col. 5, l. 60 - col. 6, l. 4; Figs. 1 and 2).

To play back the stored frames, the user presses the "Play Loop" button 68 on the control 14. This causes the sequence of video frames currently stored in memory 12 to be repetitively displayed on the monitor 38 -- a sequence of frames that is repeated over and over again until the control settings are changed (Herzog, col. 5, ll. 12-24; Fig. 1).

While the recording and playback functionality of Herzog is responsive to a manual operation (i.e., pushing a button) as Appellants indicate, we nevertheless conclude that the skilled artisan could have reasonably incorporated such a feature in Cotton's surveillance system that automatically changes the display format and records responsive to detected alarm events. Significantly, Appellants have provided no evidence on this record to establish that the record and playback features of Herzog's system would be incapable of being modified for automatic operation (i.e., responsive to detected alarm events) as in Cotton.

In our view, the skilled artisan would readily understand that incorporating a system such as that disclosed by Herzog that stores multiple incoming frames of video and plays back the stored frames in a repetitive sequence (i.e., a loop) would only enhance the functionality of Cotton's surveillance system. Such an enhancement would facilitate automatically displaying a repeated sequence of images of a particular camera associated with an alarm event. By repeatedly looping the display of relevant video frames associated with an alarm event upon occurrence of the event, the

system would automatically display the relevant video frames associated with the alarm event *indefinitely*. As a result, the viewer would not need to search for these relevant video frames associated with the alarm event well after the event occurs.

We are unpersuaded by Appellants' argument (App. Br. 10-11; Reply Br. 3-4) that Cotton and Herzog are incompatible since Herzog continuously fills available memory with video information, whereas Cotton teaches recording a limited amount of information upon activating an alarm. Herzog only continuously fills the available memory with video information *so long as recording is enabled* (i.e., when the user presses the "Record Loop" button 62 on the control 14). And even when recording is enabled in Herzog, the amount of video that is actually recorded is limited by the available memory -- memory that is overwritten after being filled with video information until the recording process is stopped.

Since Herzog limits the amount of information that is actually recorded, this feature is actually consistent with Cotton's goal of recording a limited amount of information upon activating an alarm. In short, we see no reason why the skilled artisan could not incorporate the teachings of Herzog in Cotton's surveillance system. In our view, the skilled could readily modify Herzog's manual recording process in the combined Cotton/Herzog system such that recording was enabled and disabled automatically responsive to an alarm event.

For at least these reasons, we will sustain the Examiner's rejection of representative claim 1 as well as claims 2-15 which fall with claim 1.

The Obviousness Rejection Based on Tapp and Quirk

We now consider the Examiner's rejection of claims 1-3, 5, and 6 under 35 U.S.C. § 103(a) as unpatentable over Tapp and Quirk. Regarding independent claim 1, the Examiner's rejection essentially finds that Tapp teaches an observation system with every claimed feature except for means for repeatedly displaying a sequence formed by the plural images. The Examiner cites Quirk as teaching this feature and concludes that it would have been obvious to one of ordinary skill in the art at the time of the invention to repeatedly display a sequence of plural images in the system of Tapp (Ans. 4-5, 10, and 11).

Appellants do not dispute the Examiner's interpretation of Tapp, but rather argue that Quirk does not cure the deficiencies of Tapp. Appellants emphasize that the "repeated images" noted in Quirk are repeated *spatially* on several displays--not temporally. According to Appellants, Quirk merely shows the same image on several displays at the same time (App. Br. 15; Reply Br. 9-10).

The issue before us, then, is whether Quirk reasonably teaches or suggests repeatedly displaying a sequence of images as claimed. For the following reasons, we answer this question "no."

Quirk discloses a display panel consisting of a matrix of independently controlled electronic display screens 14. The screens may form a repeated image or the individual images may form a mosaic of a larger image covering the area of several screens. The displayed image may in this way be varied at will (Quirk, Abstract; P. 1, ll. 23-28; the Figure).

Based on this relatively short disclosure, Quirk is somewhat ambiguous on whether the "repeated image" is repeated spatially,

temporally, or both. Therefore, we do not agree with Appellants' assertion that images are not repeated temporally in Quirk.

Nevertheless, even if images are repeated temporally, there is simply nothing in Quirk to suggest repeatedly displaying a *sequence* of such images as claimed, let alone upon the occurrence of an event.

For these reasons, we will not sustain the Examiner's rejection of independent claim 1 or claims 2, 3, 5, and 6 for similar reasons.

The Obviousness Rejection Based on Tapp and Johnson

We now consider the Examiner's rejection of claims 1-15 under 35 U.S.C. § 103(a) as unpatentable over Tapp and Johnson. Regarding independent claim 1, the Examiner's rejection essentially finds that Tapp teaches an observation system with every claimed feature except for means for repeatedly displaying a sequence formed by the plural images. The Examiner cites Johnson as teaching this feature and concludes that it would have been obvious to one of ordinary skill in the art at the time of the invention to repeatedly display a sequence of plural images in the system of Tapp (Ans. 5-7).

As with the previous rejection based on Tapp, Appellants do not dispute the Examiner's interpretation of that reference, but rather argue that Johnson addresses an entirely different problem such that the skilled artisan would not have any motivation to combine the reference with Tapp. Appellants add that even if the references were combined, Johnson does not teach or suggest repeatedly displaying a sequence. Rather, Appellants contend, Johnson displays each buffer only once and not repeatedly.

Appellants also argue that Johnson's graphic refresh is not performed upon the occurrence of an event (App. Br. 16-17; Reply Br. 10-12).

The Examiner contends that Johnson suggests repeatedly displaying the first, second, and third complete frames from a buffer, and that these complete frames form a sequence (Ans. 11).

We will not sustain the Examiner's rejection based on Tapp and Johnson. Johnson's display system utilizes a graphics memory comprising three buffers B1-B3. After system initialization, a video port begins filling buffer B1 with a video frame of information. If a graphics refresh signal is provided and if buffer B3 is full with a previously filled video frame, then the contents of buffer B3 are displayed. Once buffer B1 is filled, the system begins filling buffer B2 with the next video frame. If there is a graphics refresh signal at this time, then the contents of buffer B1 will be displayed. Similarly, once buffer B2 is filled, then the system begins filling buffer B3 and will display the contents of buffer B2 if a graphics refresh signal is provided (Johnson, col. 3, l. 34 - col. 4, l. 5; col. 4, l. 53 - col. 5, l. 24; Figs. 1A-4B).

Johnson teaches that if there are multiple graphics refresh signals during the period that the contents of buffer B3 are displayed (i.e., the period when buffer B3 is full while filling buffer B1), the contents of buffer B3 are *repeatedly* provided to the display monitor (Johnson, col. 4, ll. 62-64).[4] While this passage certainly indicates that the contents of the buffer are repeatedly provided to the display monitor, we agree with Appellants that Johnson is directed to an entirely different problem and simply does not cure the deficiencies of Tapp's surveillance system.

[4] *See also* Johnson, col. 5, ll. 16-18 (noting that the contents of buffer B2 will be *repeated* or discarded).

In our view, Johnson simply does not teach or suggest repeatedly displaying a sequence of plural images upon the occurrence of an event as claimed. Even if we assume, without deciding, that the first, second, and third complete frames in Johnson form a sequence as the Examiner contends (Ans. 11), there is simply no teaching or suggestion to repeatedly display *that* sequence, let alone to combine such a teaching with Tapp's surveillance system. Moreover, Johnson's graphic refreshes are not performed upon the occurrence of an event in the manner claimed.

For at least these reasons, we will not sustain the Examiner's rejection of independent claim 1 or claims 2-15 for similar reasons.

New Ground of Rejection Under 37 C.F.R. § 41.50(b)

Claims 1-15 are rejected under 35 U.S.C. § 103(a) as unpatentable over Tapp and Herzog. Tapp discloses a surveillance system with cameras 20, 22, 24, 26 disposed on surveillance zones A-D. The cameras are activated via camera switcher 38 responsive to a detected undesirable presence in the zones via detectors 12, 14, 16, 18. A recording device 70 can record images displayed by monitor 36 and can be controlled (Tapp, col. 1, ll. 16-63; col. 4, ll. 21-39; Figs. 1 and 4).

Significantly, in the event two or more detectors generate activation signals, camera switcher 38 can transmit images serially to monitor 36 through timed intervals (Tapp, col. 4, ll. 12-20). Such a serial transmission of images, in effect, constitutes displaying a *sequence* of plural images upon the occurrence of an event (i.e., two or more detectors generating activation signals).

It is undisputed that Tapp discloses all of the claimed subject matter except for *repeatedly* displaying such a sequence of images upon occurrence of the event.

Herzog discloses a system 10 for storing multiple incoming frames of video in memory and repetitively playing back a continuously repeating, consecutive sequence of the stored frames. To this end, a control 14 and memory 12 are disposed between cameras 24, 28 and display consoles 32, 34. To begin the recording process, the user presses the "Record Loop" button 62 on the control 14. Then, every subsequent incoming frame of video is stored in memory 12. Since memory 12 is arranged as a ring as shown in Figure 2, the recording process fills all available memory locations and then overwrites previously filled memory locations until the recording process is stopped (Herzog, col. 3, l. 62 - col. 4, l. 45; col. 5, l. 60 - col. 6, l. 4; Figs. 1 and 2).

To play back the stored frames, the user presses the "Play Loop" button 68 on the control 14. This causes the sequence of video frames currently stored in memory 12 to be repetitively displayed on the monitor 38 -- a sequence of frames that is repeated over and over again until the control settings are changed (Herzog, col. 5, ll. 12-24; Fig. 1).

While the recording and playback functionality of Herzog is responsive to a manual operation (i.e., pushing a button), we nevertheless conclude that the skilled artisan could have reasonably incorporated such a feature in Tapp's surveillance system that automatically displays camera video and records responsive to detected events.

In our view, the skilled artisan would readily understand that incorporating a system such as that disclosed by Herzog that stores multiple

incoming frames of video and plays back the stored frames in a repetitive sequence (i.e., a loop) would only enhance the functionality of Tapp's surveillance system. Such an enhancement would facilitate automatically displaying a repeated sequence of images of a particular camera associated with an detected event. By repeatedly looping the display of relevant video frames associated with a detected event upon occurrence of the event, the system would automatically display the relevant video frames associated with the detected event *indefinitely*. As a result, the viewer would not need to search for these relevant video frames associated with the detected event well after the event occurs.

Since Tapp teaches displaying a sequence of images upon detection of an event, and Herzog teaches repeatedly displaying a sequence of stored images, it would have been obvious to the skilled artisan at the time of the invention to *repeatedly* display the sequence of images acquired upon occurrence of the event in Tapp to automatically display the relevant video frames associated with the detected event *indefinitely*, thus precluding the need to search for these frames well after the event occurs.

DECISION

We have sustained the Examiner's rejection with respect to claims 1-15 based on the disclosures of Cotton and Herzog. We have not, however, sustained the Examiner's rejections of (1) claims 1-3, 5, and 6 based on Tapp and Quirk, and (2) claims 1-15 based on Tapp and Johnson. Also, we have entered a new ground of rejection for claims 1-15 based on the disclosures of Tapp and Herzog. Therefore, the Examiner's decision rejecting claims 1-15 is affirmed.

This decision contains a new ground of rejection pursuant to 37 C.F.R. § 41.50(b). Section 41.50(b) provides that "[a] new ground of rejection . . . shall not be considered final for judicial review."

37 C.F.R. § 41.50(b) also provides that the Appellants, WITHIN TWO MONTHS FROM THE DATE OF THE DECISION, must exercise one of the following two options with respect to the new ground of rejection to avoid termination of the appeal as to the rejected claims:

> (1) Submit an appropriate amendment of the claims so rejected or new evidence relating to the claims so rejected, or both, and have the matter reconsidered by the examiner, in which event the proceeding will be remanded to the examiner. . . .
>
> (2) Request that the proceeding be reheard under § 41.52 by the Board upon the same record. . . .

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED
37 C.F.R. § 41.50(b)

KIS

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